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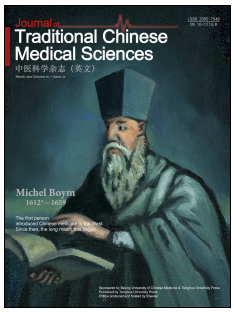

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Effects of ephedra asarum aconite decoction on Th1/Th2 balance in two animal models of allergic rhinitis

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Abstract

Objective: Ephedra asarum aconite decoction is used in the clinical treatment of allergic rhinitis. We investigated the effects of ephedra asarum aconite decoction on Th1/Th2 balance in two animal models of allergic rhinitis and in activated T cells *in vitro*.

Methods: Animal models of simple and compound kidney yang deficiency types of allergic rhinitis were treated with ephedra asarum aconite decoction to observe the efficacy of this Traditional Chinese Medicine formula on allergic symptoms, serum cytokines, and tissue RNA levels. We also cultured and activated T cells from the mouse. After treatment with ephedra asarum aconite decoction, we tested the proliferation and differentiation of T cells.

Results: Ephedra asarum aconite decoction relieved allergy symptoms in both types of animal models, and was more effective in the compound kidney yang deficiency model. In addition to its anti-allergic efficacy, ephedra asarum aconite decoction significantly improved the health status of animals in the compound kidney yang deficiency groups, significantly made their bodyweight rising up, and significantly increased the T-bet mRNA/GATA-3 mRNA ratio. Moreover, ephedra asarum aconite decoction promoted the proliferation of activated T cells and inhibited the differentiation to Th2 cells *in vitro*.

Conclusions: Ephedra asarum aconite decoction regulates the balance of Th1/Th2 to ameliorate allergic conditions.

KEYWORDS

Ephedra asarum aconite decoction; Th1/Th2; Allergic rhinitis; Guinea pigs

Introduction

Allergic inflammatory diseases include disorders such as asthma, allergic rhinitis (AR), and atopic dermatitis. Th2-type cells secrete IL-4, while Th1-type cells secrete IFN-γ, and the IFN-γ/IL-4 ratio indicates the ratio of Th1/Th2 cells. $CD4^+$T cells will drive the Th0 cells toward Th2 cell differentiation, producing Th2-type cytokines (such as IL-4 and IL-1) to stimulate the